Human Variation Resources at NCBI

- OMIM
- GeneTests/GeneReviews
- dbSNP

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- OMIM
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- dbGaP – database of Genotype and Phenotype
- Medical Sequencing
- CETT – Genetic Testing Results
- RefSeqGene – standard gene based coordinates
- Putting it together

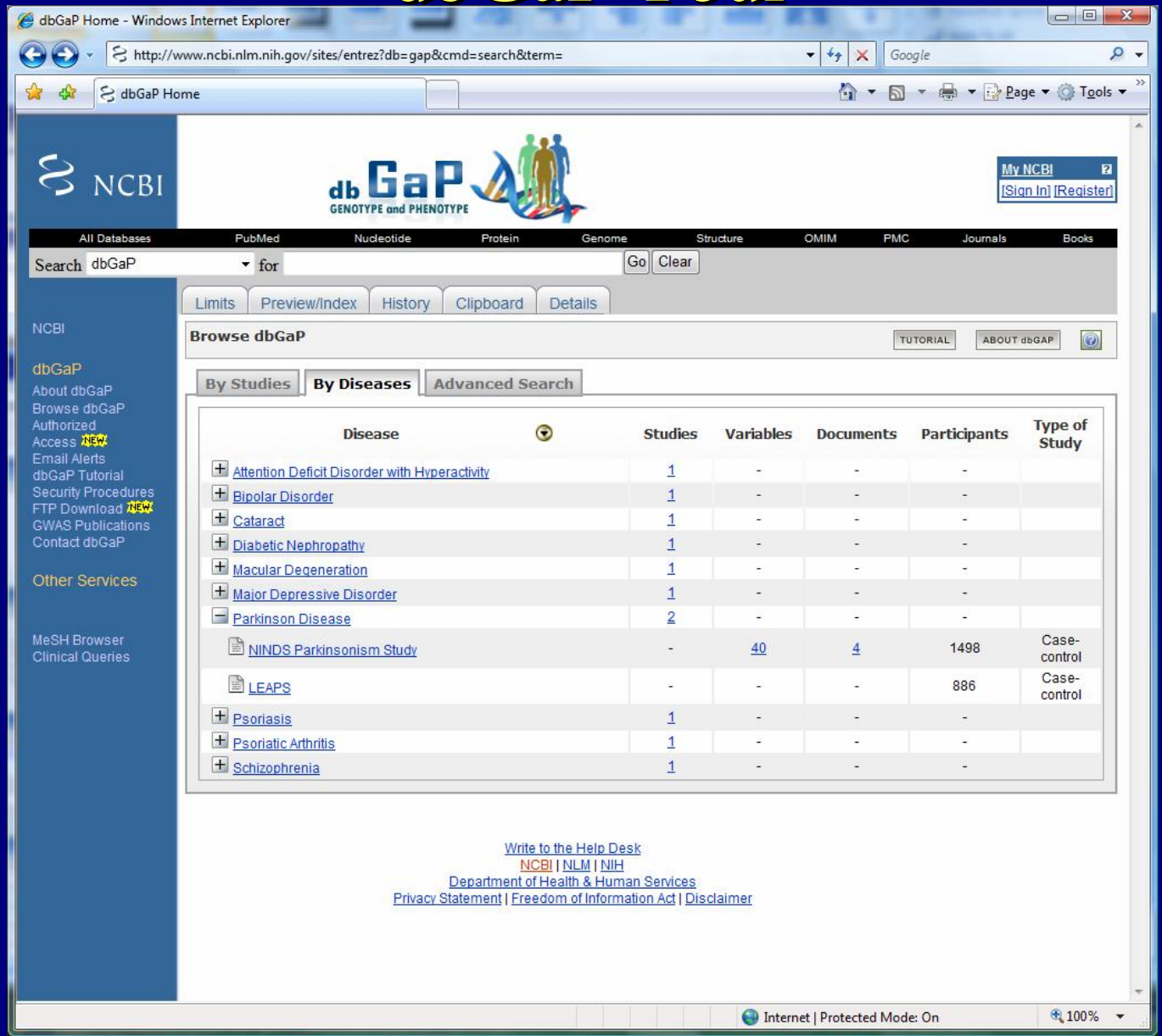
Finding dbGaP

http://view.ncbi.nlm.nih.gov/dbGaP

NCBI

110101

dbGaP Tour



Research Group
Centrum use and progression of age-related cataract in the Age-Related Eye Disease Study: a propensity score approach. AREDS report No. 21. Ophthalmology. 2006 Aug;113(8):1264-70

Diseases Related to This Study (MESH terms)

- Macular Degeneration
- Cataract

Attribution

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  - Emily Y. Chew, MD, Co-Investigator.
  - John Paul SanGiovanni, ScD, Project Officer (2003 to 2007).
  - Natalie Kurinij, PhD, Project Officer (1990 to 2003).
  - Robert Sperduto, MD, Director, Lens Project.
- **Coordinating Center (The EMMES Corporation, Rockville, MD)**
  - Traci E. Clemons, PhD, Principal Investigator (2003-2007).
  - Anne S. Lindblad, PhD, Principal Investigator (1990-2003).
  - Roy C. Milton, PhD, Co-Principal Investigator.
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  - Matthew D. Davis, MD, Co-Principal Investigator.
  - Ronald Klein, MD, Co-Principal Investigator.

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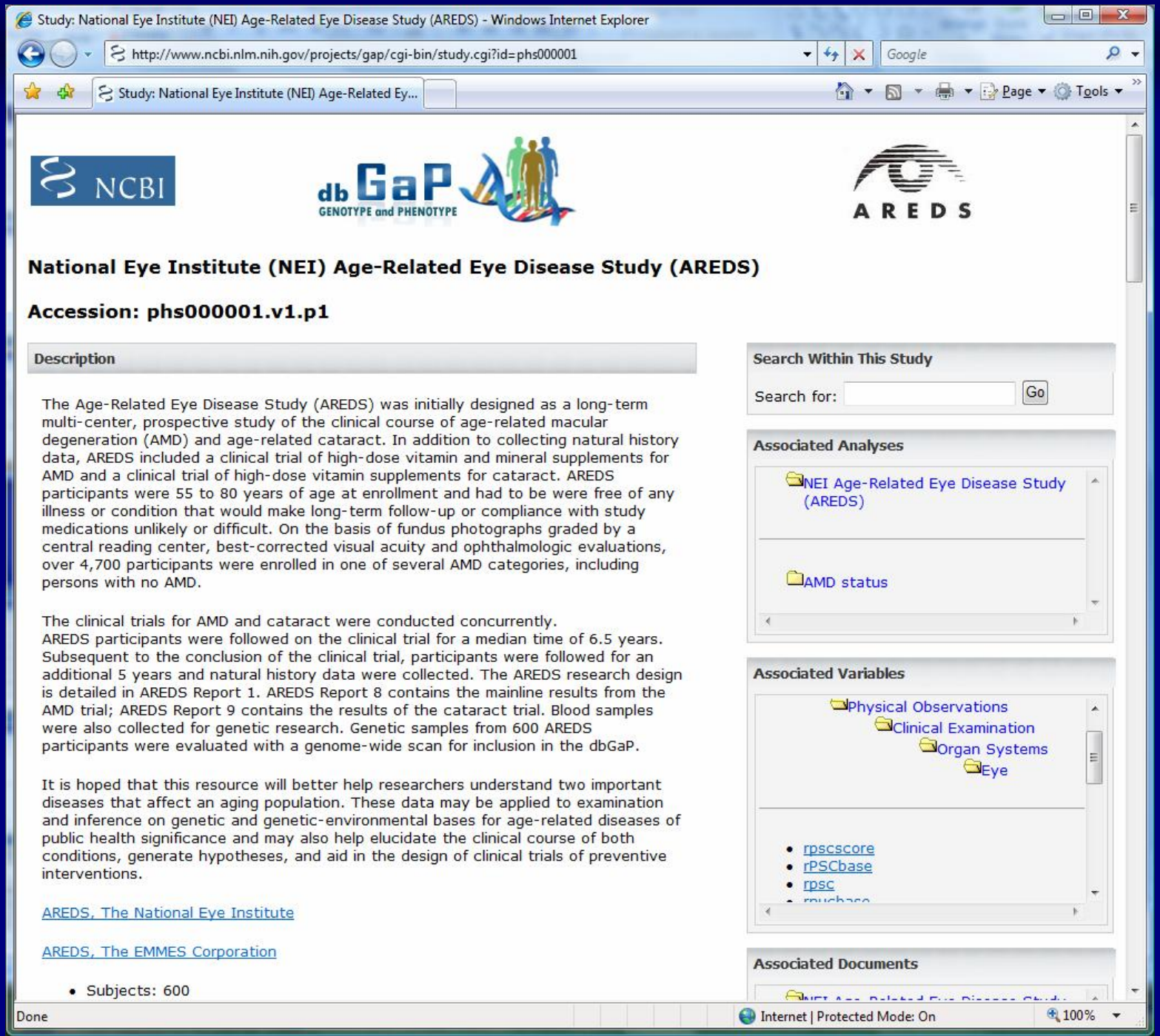
Study: National Eye Institute (NEI) Age-Related Eye Disease Study (AREDS) - Windows Internet Explorer
http://www.ncbi.nlm.nih.gov/projects/gap/cgi-bin/study.cgi?id=phs000001
Google
Study: National Eye Institute (NEI) Age-Related Ey...
Page
Tools
NCBI
db GaP
GENOTYPE and PHENOTYPE
AREDS
National Eye Institute (NEI) Age-Related Eye Disease Study (AREDS)
Accession: phs000001.v1.p1
Description
The Age-Related Eye Disease Study (AREDS) was initially designed as a long-term multi-center, prospective study of the clinical course of age-related macular degeneration (AMD) and age-related cataract. In addition to collecting natural history data, AREDS included a clinical trial of high-dose vitamin and mineral supplements for AMD and a clinical trial of high-dose vitamin supplements for cataract. AREDS participants were 55 to 80 years of age at enrollment and had to be were free of any illness or condition that would make long-term follow-up or compliance with study medications unlikely or difficult. On the basis of fundus photographs graded by a central reading center, best-corrected visual acuity and ophthalmologic evaluations, over 4,700 participants were enrolled in one of several AMD categories, including persons with no AMD.
The clinical trials for AMD and cataract were conducted concurrently.
AREDS participants were followed on the clinical trial for a median time of 6.5 years. Subsequent to the conclusion of the clinical trial, participants were followed for an additional 5 years and natural history data were collected. The AREDS research design is detailed in AREDS Report 1. AREDS Report 8 contains the mainline results from the AMD trial; AREDS Report 9 contains the results of the cataract trial. Blood samples were also collected for genetic research. Genetic samples from 600 AREDS participants were evaluated with a genome-wide scan for inclusion in the dbGaP.
It is hoped that this resource will better help researchers understand two important diseases that affect an aging population. These data may be applied to examination and inference on genetic and genetic-environmental bases for age-related diseases of public health significance and may also help elucidate the clinical course of both conditions, generate hypotheses, and aid in the design of clinical trials of preventive interventions.
AREDS, The National Eye Institute
AREDS, The EMMES Corporation
Subjects: 600
Search Within This Study
Search for:
Go
Associated Analyses
NEI Age-Related Eye Disease Study (AREDS)
AMD status
Associated Variables
Physical Observations
Clinical Examination
Organ Systems
Eye
rpscscore
rPSCbase
rpsc
Associated Documents
Done
Internet | Protected Mode: On
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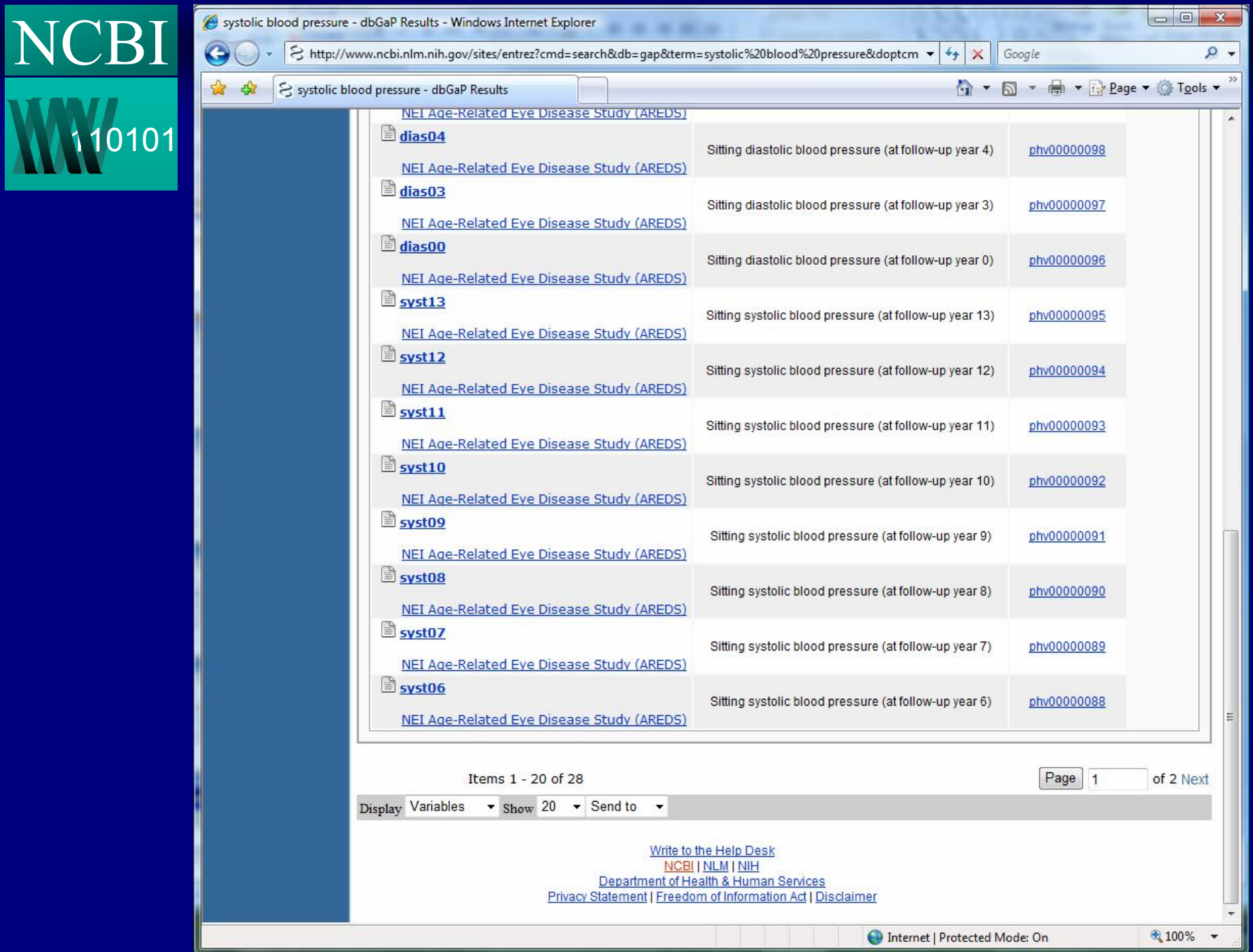
Chapter 7 EXAMINATION PROCEDURES

7.1 INTRODUCTION

The procedures for carrying out the examinations required in the study are described in this chapter. Required ocular examinations include refraction and visual acuity measurements, intraocular pressure measurement, and ophthalmoscopic examination. General characteristic assessments include measurement of height, weight, and blood pressure and determination of past medical history. Risk factor assessments will require the administration of the food frequency and sunlight exposure questionnaires as well as collection of blood specimens. Procedures for participant identification, masking, distribution and management of the supplementation, adherence assessment, and home visit examination are also described. Procedures for taking photographs of the lens and fundus are described in detail in Chapter 8. The schedule and description of participant visits in Chapter 6 outline the examinations required during each visit.

7.2 REFRACTION AND VISUAL ACUITY

A manifest refraction and visual acuity measurement according to the detailed study protocol must be performed during (a) the Qualifying Visit when the visual acuity score using Chart R is 73 letters or less in at least one eye, (b) the Randomization Visit, (c) Annual Visits, and (d) any Nonannual Visit when the visual acuity score using Chart R has dropped by 10 letters or more compared to the Randomization Visit score for the first time. Participants' pupils should not be dilated at the time of visual acuity testing at any study visit; except they may be dilated during the Qualifying Visit. Pinhole acuity will not be tested as part of AREDS. At the Qualifying Visit, visual acuity may be initially assessed utilizing the participant's current distance glasses. At the Nonannual Visits, visual acuity is initially assessed utilizing the previously obtained manifest refraction. Participants will be asked to read the letters on Chart R only (not Charts 1 or 2), using the equipment described in Section 7.2.1. They will start reading from the top left-most letters--first with the right eye and then with the left eye. A visual acuity score will be calculated as described in Section 7.2.3.3. If at the Qualifying Visit


NCBI
110101
systolic blood pressure - dbGaP Results - Windows Internet Explorer
http://www.ncbi.nlm.nih.gov/sites/entrez?cmd=search&db=gap&term=systolic%20blood%20pressure&doptcm
Google
systolic blood pressure - dbGaP Results
Page
Tools
NEI Age-Related Eye Disease Study (AREDS)
dias04
NEI Age-Related Eye Disease Study (AREDS)
Sitting diastolic blood pressure (at follow-up year 4)
phv00000098
dias03
NEI Age-Related Eye Disease Study (AREDS)
Sitting diastolic blood pressure (at follow-up year 3)
phv00000097
dias00
NEI Age-Related Eye Disease Study (AREDS)
Sitting diastolic blood pressure (at follow-up year 0)
phv00000096
syst13
NEI Age-Related Eye Disease Study (AREDS)
Sitting systolic blood pressure (at follow-up year 13)
phv00000095
syst12
NEI Age-Related Eye Disease Study (AREDS)
Sitting systolic blood pressure (at follow-up year 12)
phv00000094
syst11
NEI Age-Related Eye Disease Study (AREDS)
Sitting systolic blood pressure (at follow-up year 11)
phv00000093
syst10
NEI Age-Related Eye Disease Study (AREDS)
Sitting systolic blood pressure (at follow-up year 10)
phv00000092
syst09
NEI Age-Related Eye Disease Study (AREDS)
Sitting systolic blood pressure (at follow-up year 9)
phv00000091
syst08
NEI Age-Related Eye Disease Study (AREDS)
Sitting systolic blood pressure (at follow-up year 8)
phv00000090
syst07
NEI Age-Related Eye Disease Study (AREDS)
Sitting systolic blood pressure (at follow-up year 7)
phv00000089
syst06
NEI Age-Related Eye Disease Study (AREDS)
Sitting systolic blood pressure (at follow-up year 6)
phv00000088
Items 1 - 20 of 28
Page 1 of 2 Next
Display Variables Show 20 Send to
Write to the Help Desk
NCBI | NLM | NIH
Department of Health & Human Services
Privacy Statement | Freedom of Information Act | Disclaimer
Internet | Protected Mode: On
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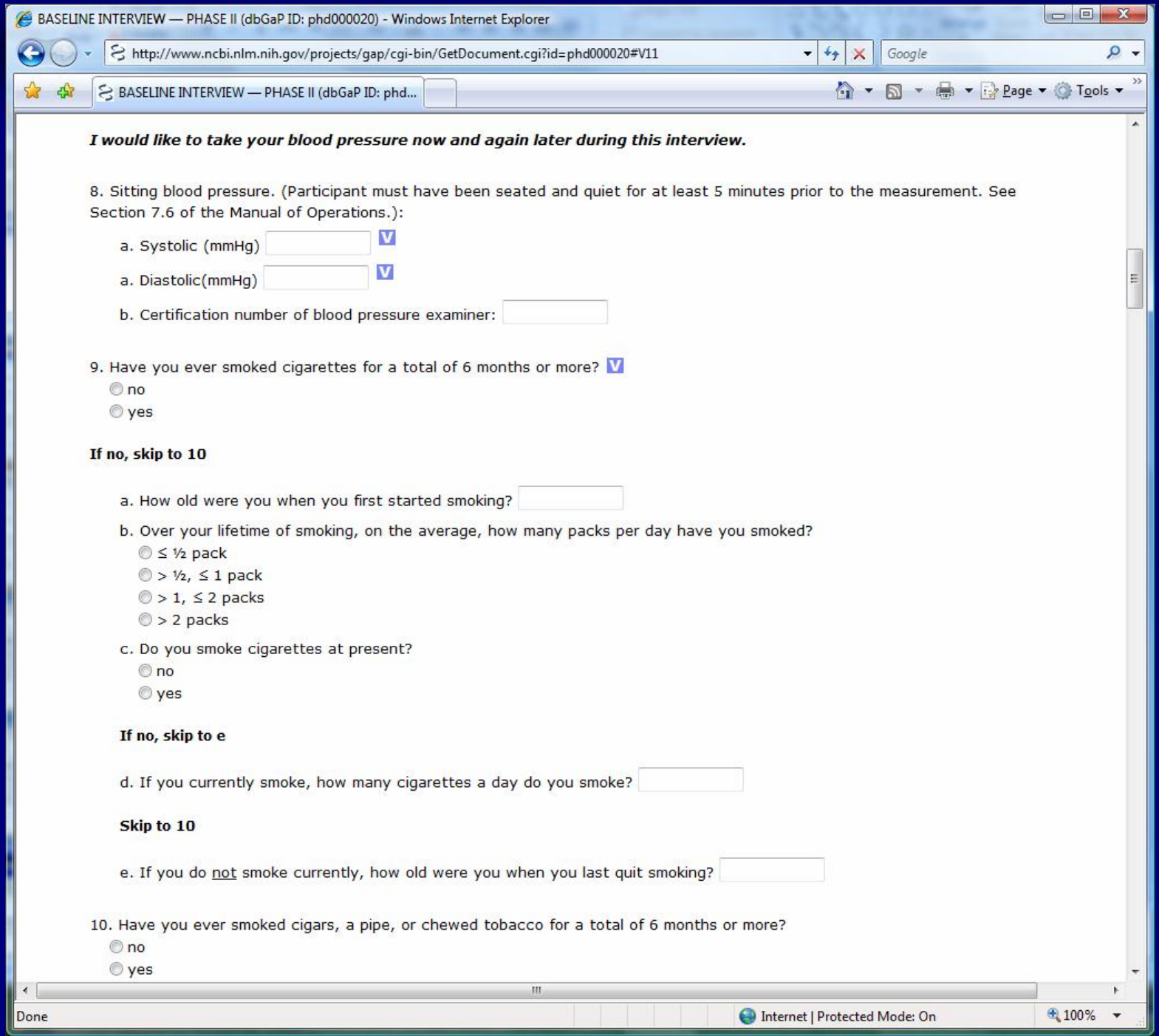

BASELINE INTERVIEW — PHASE II (dbGaP ID: phd000020) - Windows Internet Explorer

http://www.ncbi.nlm.nih.gov/projects/gap/cgi-bin/GetDocument.cgi?id=phd000020#V11

BASELINE INTERVIEW — PHASE II (dbGaP ID: phd...

I would like to take your blood pressure now and again later during this interview.

8. Sitting blood pressure. (Participant must have been seated and quiet for at least 5 minutes prior to the measurement. See Section 7.6 of the Manual of Operations.):

a. Systolic (mmHg) [ ] V

a. Diastolic(mmHg) [ ] V

b. Certification number of blood pressure examiner: [ ]

9. Have you ever smoked cigarettes for a total of 6 months or more? V

- ○ no
- ○ yes

If no, skip to 10

a. How old were you when you first started smoking? [ ]

b. Over your lifetime of smoking, on the average, how many packs per day have you smoked?

- ○ ≤ ½ pack
- ○ > ½, ≤ 1 pack
- ○ > 1, ≤ 2 packs
- ○ > 2 packs

c. Do you smoke cigarettes at present?

- ○ no
- ○ yes

If no, skip to e

d. If you currently smoke, how many cigarettes a day do you smoke? [ ]

Skip to 10

e. If you do not smoke currently, how old were you when you last quit smoking? [ ]

10. Have you ever smoked cigars, a pipe, or chewed tobacco for a total of 6 months or more?

- ○ no
- ○ yes

Done

Internet | Protected Mode: On

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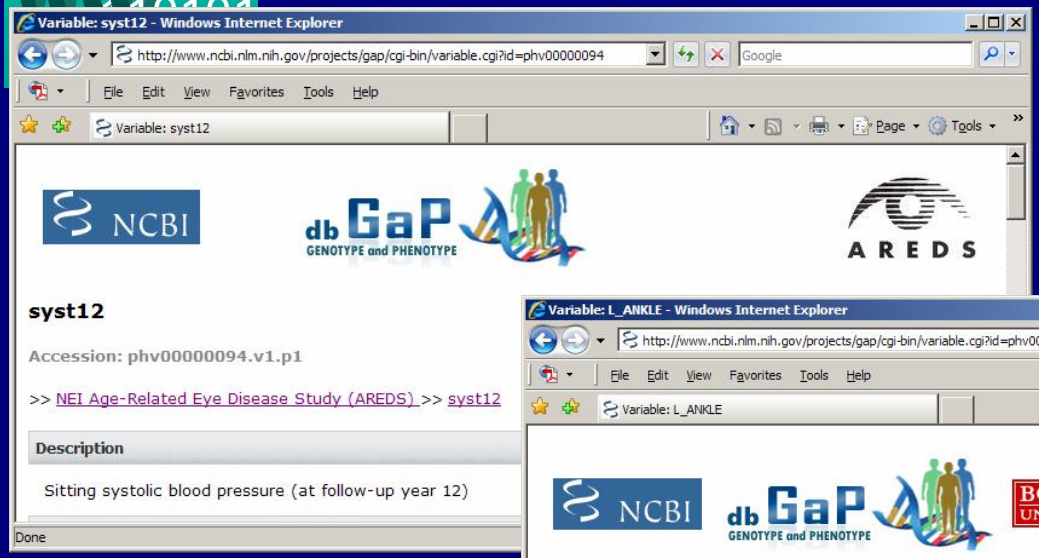
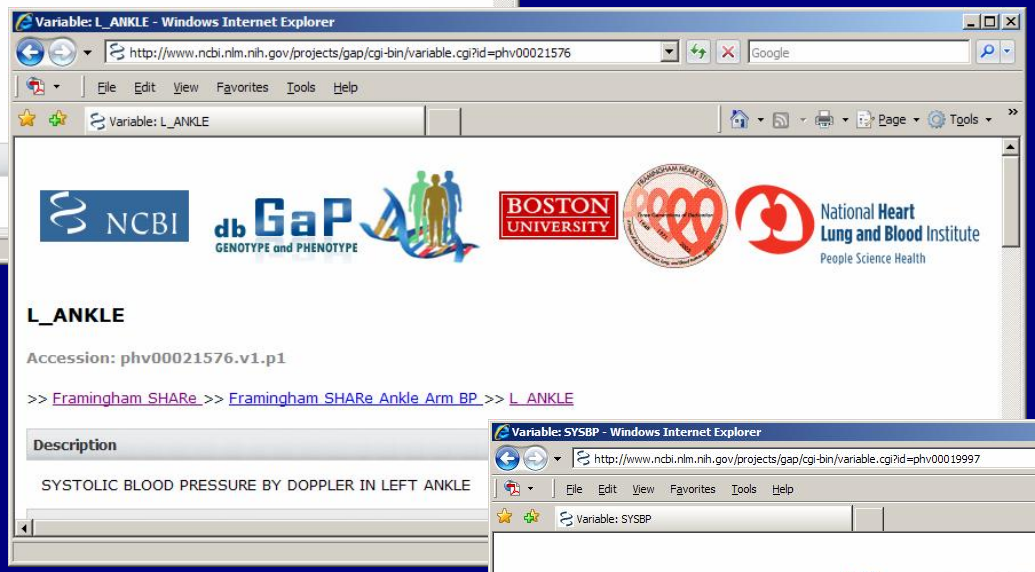
Standards Emerge from Utility





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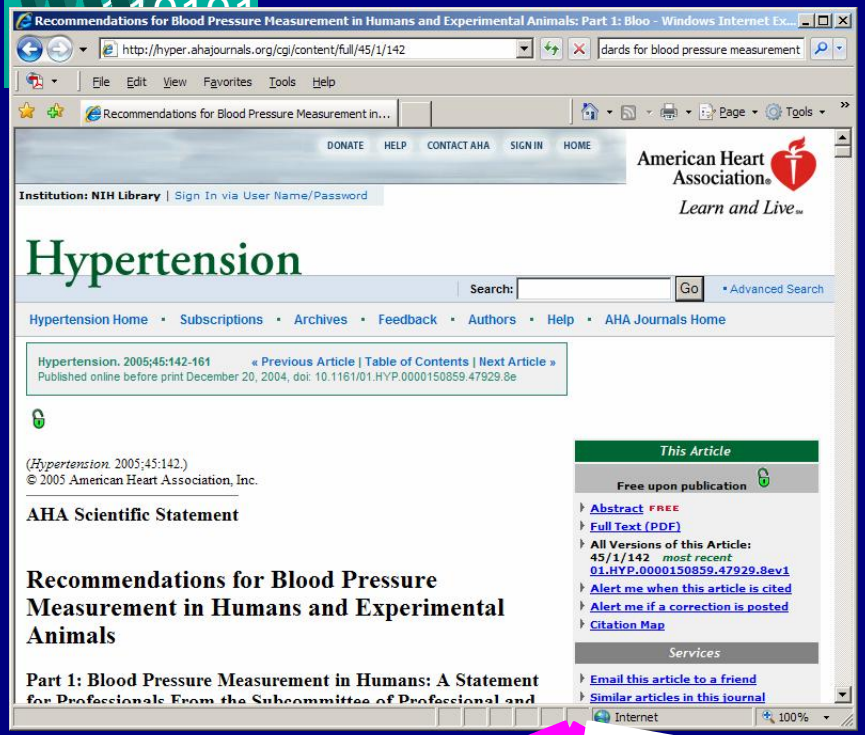
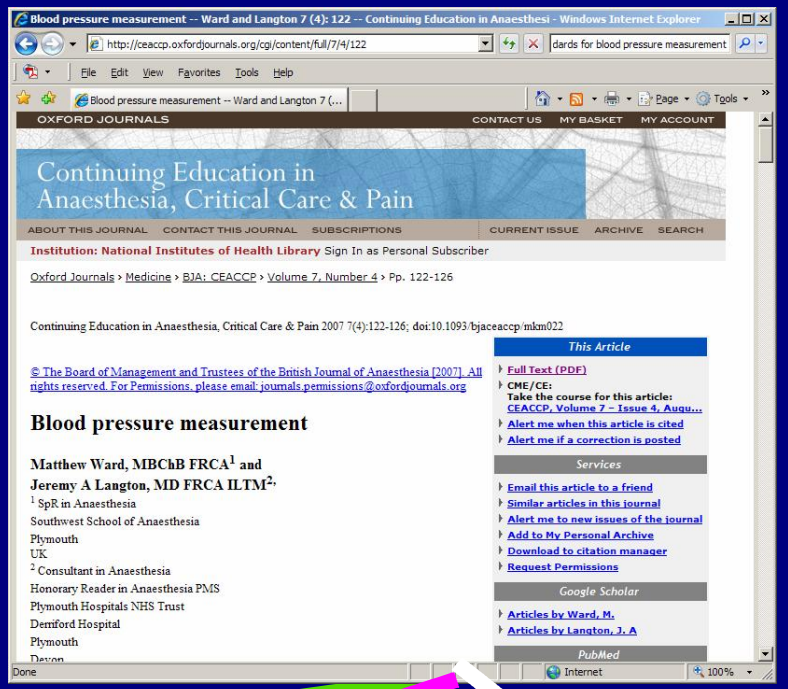
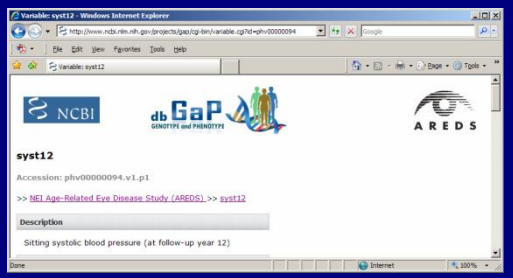
Standards Emerge from Utility







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GaP Chromosome Browser - Windows Internet Explorer

http://www.ncbi.nlm.nih.gov/SNP/GaP.cgi?rm=plotFrame&test_id=1&chr=1&from=194000000&to=196000000&me

GaP Chromosome Browser

Page Tools

AREDS

-log10(uncorrected P-value)

N/A | < 2 | 2 - 3 | 3 - 4 | 4 - 5 | 5 - 6 | 6 - 7 | > 7

Help

LOD score

N/A | <0 | 0-1 | 1 - 2 | 2 -3 | >3

Genotype Summary - Windows Internet Explorer

http://www.ncbi.nlm.nih.gov/projects/SNP/GenoFreq.cgi?aId=1&snp=rs7529589

dbGaP study phs000001: rs7529589 Genotype Summary

phv00000173	Genotype			Genotype Frequency
	CC	CT	TT	25% 50% 75%
Case	63	168	164	15.9% 42.5% 41.
Control	80	94	21	41.0% 48.2%

phv00000173	Allele		Allele Frequency
	C	T	25% 50% 75%
Case	294	496	37.2% 62.8%
Control	254	136	65.1% 34

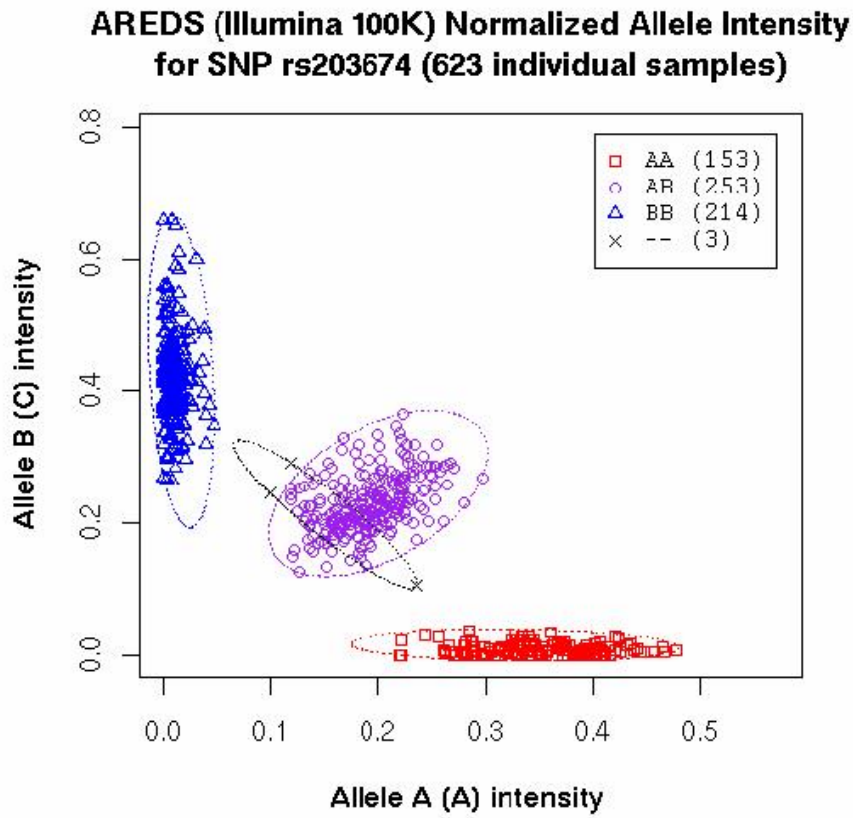
phv00000173	Number of Samples		Success Rate
	Genotyped	Total	25% 50% 75%
Case	395	395	100.0%
Control	195	198	98.5%

Case pHWE: 0.085
Control pHWE: 0.434
Odds ratio of minor allele 'C': 0.317
Chi-square : 80.670
p-value of Chi-square test: 2.67e-19

Done | Internet | Protected Mode: On

http://www.ncbi.nlm.nih.gov/projects/SNP/fetch_xy_density_plot.cgi?snp_id=203...

http://www.ncbi.nlm.nih.gov/projects/SNP/fetch_xy_density_plot.cgi?snp_id=203674&display_id=1



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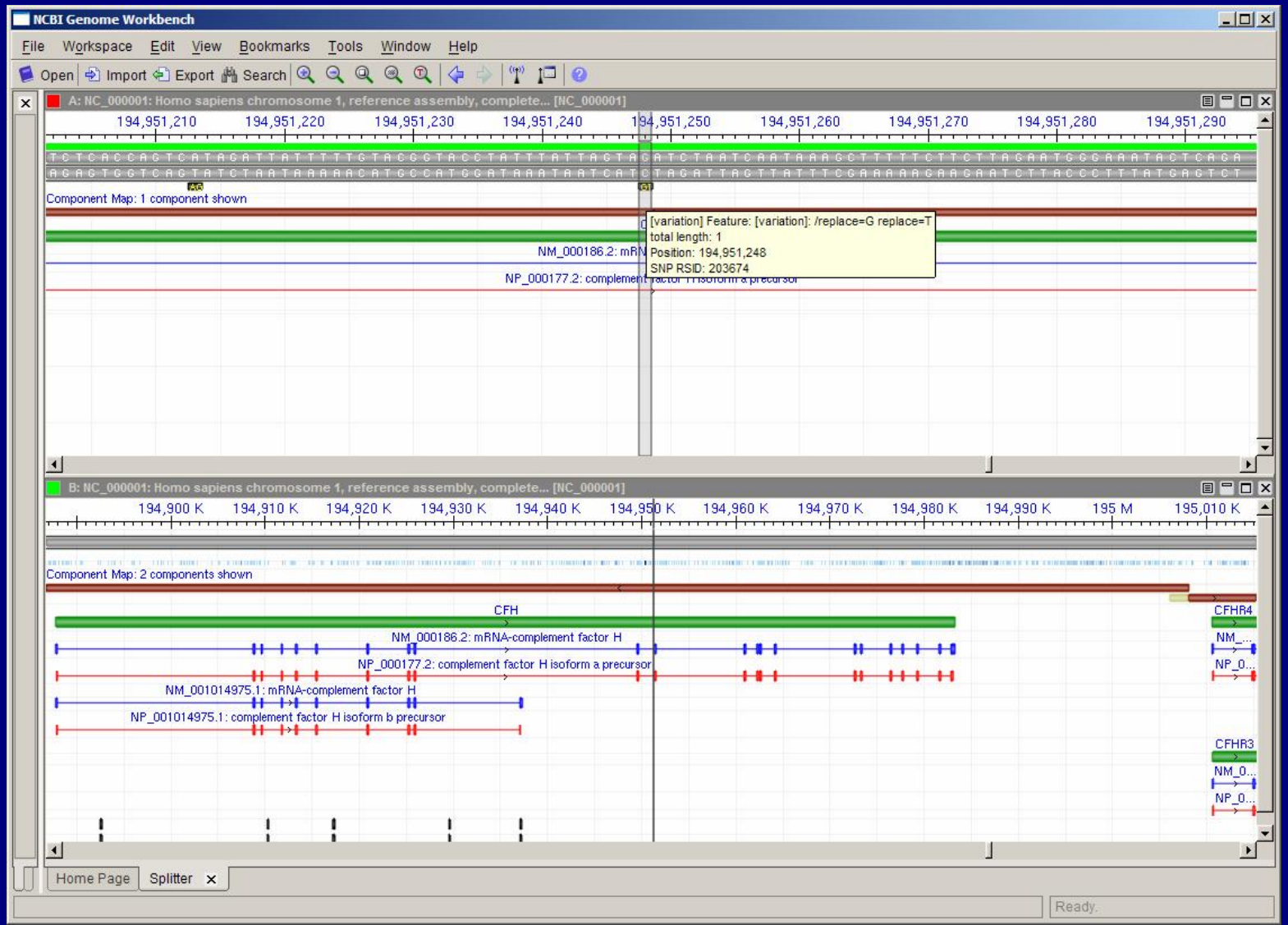
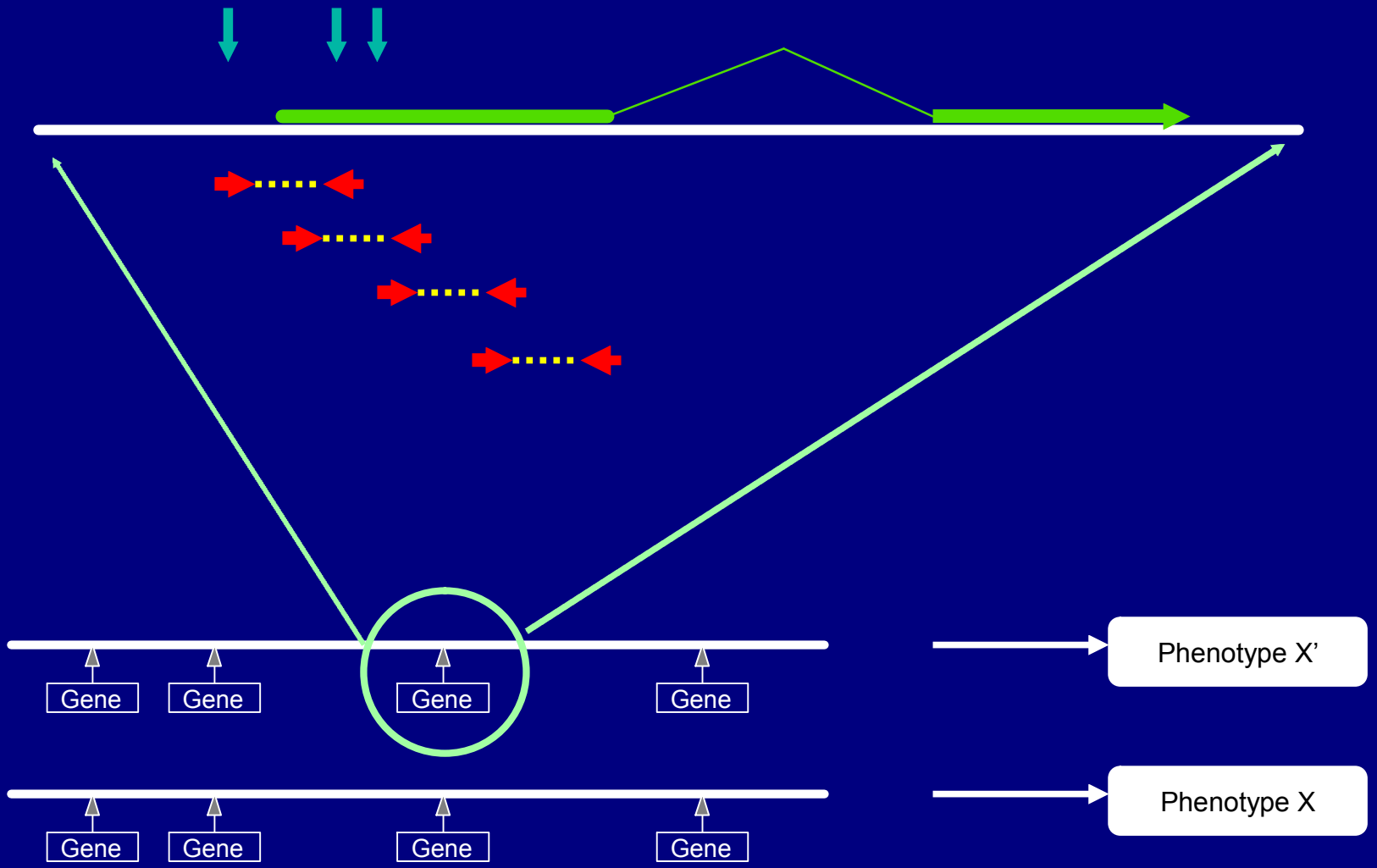
Associations to the Basepair



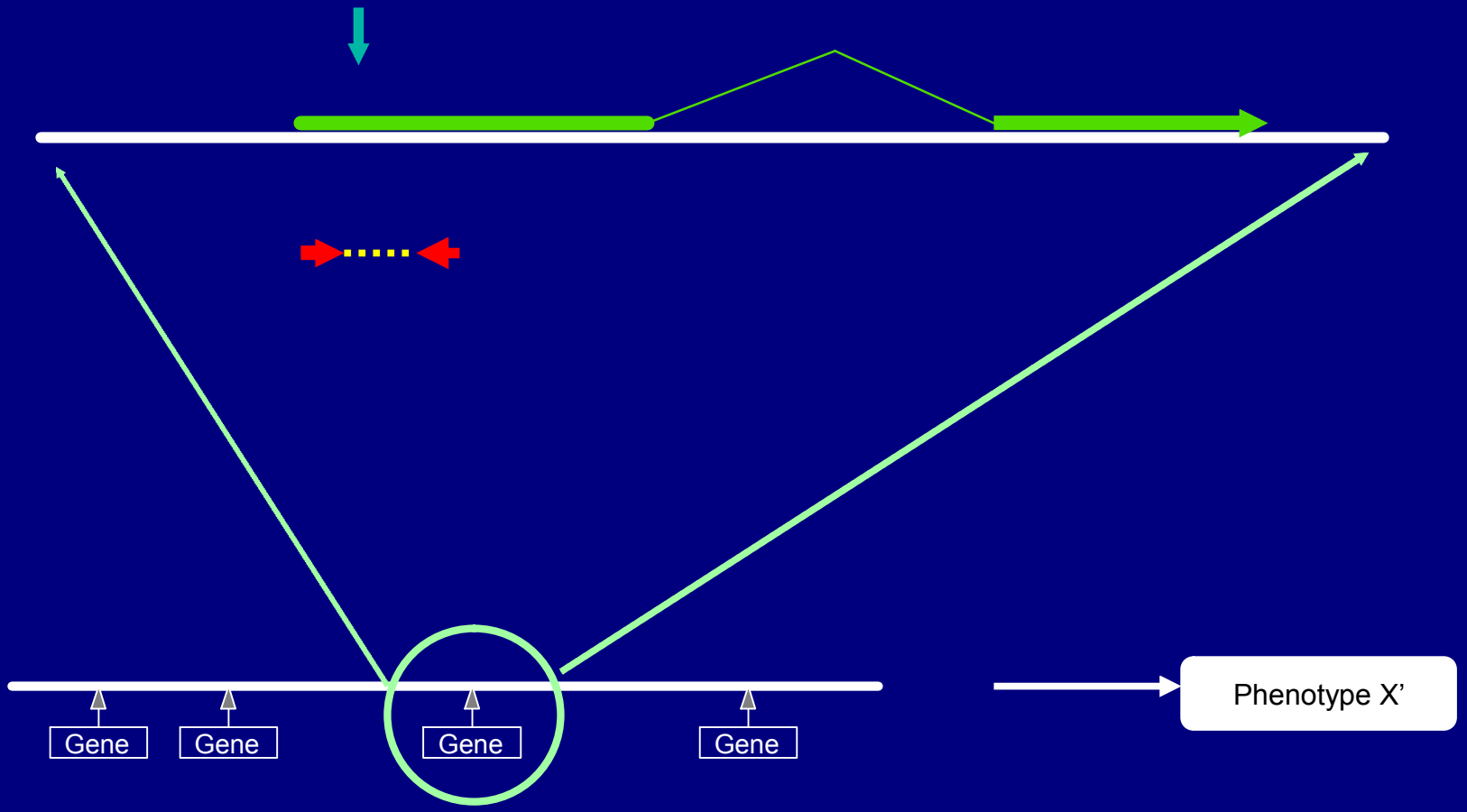
Studies scheduled for dbGaP submission 2007-2008

Projected Availability	Study Name / Disease Focus	Sponsor	Type	Number of Participants
Nov-06	AREDS	NEI	Case-Control GWAS	600
Nov-06	Parkinsonism	NINDS/NIA	Case-Control GWAS	2,573
Jun-07	ADHD	GAIN	Trio GWAS	2,874
Aug-07	Diabetic Nephropathy	GAIN	Case-Control GWAS	1,835
Sep-07	GeneLink	NHLBI	Multipoint linkage analyses	n.d.
Sep-07	Stroke	NINDS	Case-Control GWAS	1,555
Sep-07	Motor Neuron Disease/ALS	NINDS	Case-Control GWAS	1,876
Sep-07	LEAPS	MJFF	Tiered case-control GWAS	886
Sep-07	Major Depression	GAIN	Case-Control GWAS	3,720
Oct-07	Framingham SHARe	NHLBI	Family-Based Longitudinal GWAS	~9,500
Oct-07	Psoriasis	GAIN	Case-Control GWAS	2,898
Nov-07	DCCT/ EDIC	NIDDK	Longitudinal GWAS	
Dec-07	Schizophrenia	GAIN	Case-Control GWAS	2,909
Dec-07	Bipolar Disorder	GAIN	Case-Control GWAS	2,400
Early 2008	Alzheimers	NIA	Case-Control GWAS	10,000
Late 2008	8 GEI Studies	NHGRI	TBD	>30,000
Late 2008	Medical Resequencing, phase 1	NHGRI	TBD	~15,000
Late 2008	MESA SHARe	NHLBI	Longitudinal GWAS	8,000
				99,636

The Medical Sequencing Project – Finding the Causitive Mutations



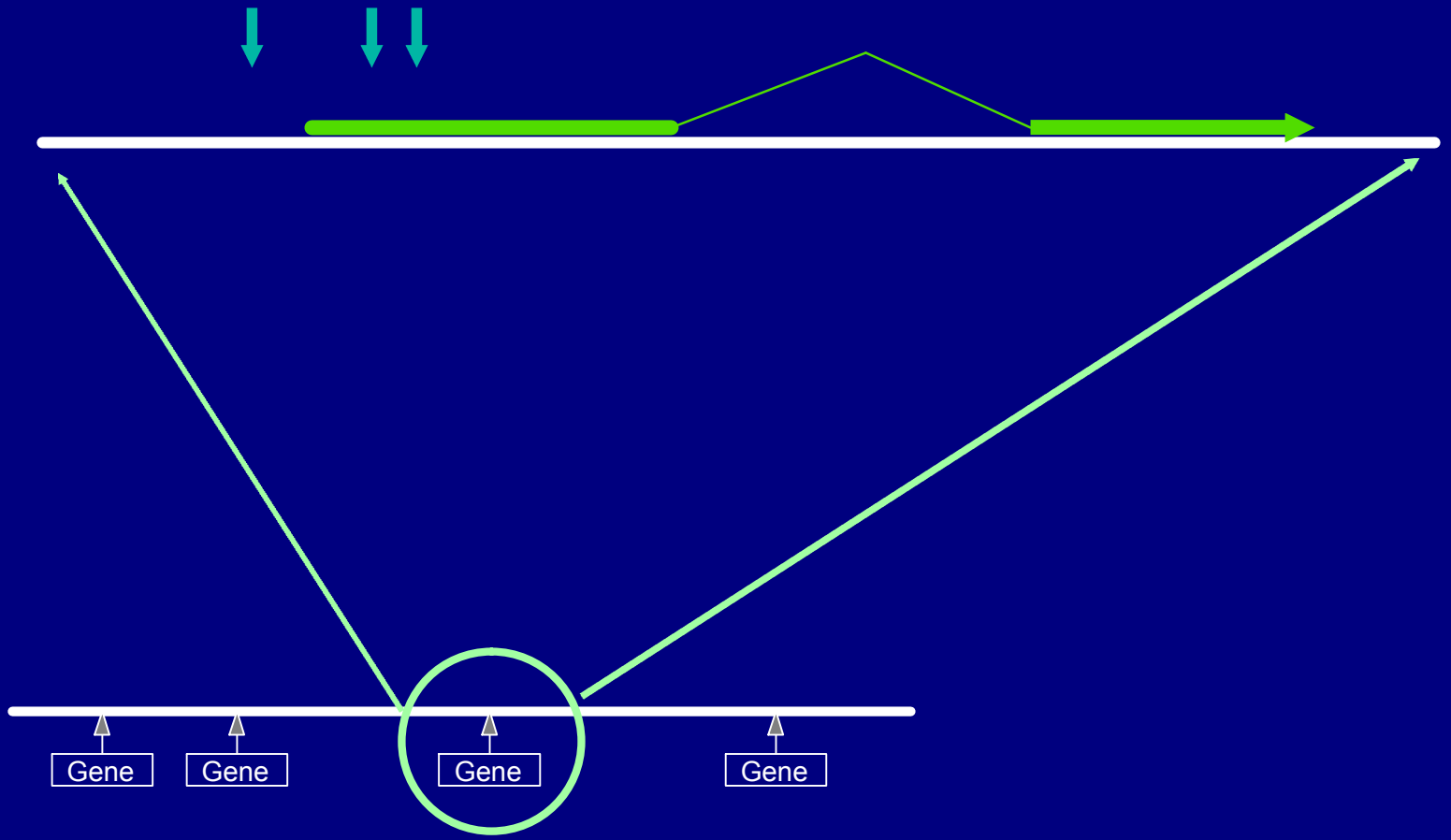
CETT Project – Converting Research to Clinical Tests



CETT Tests to date

Disease Name	Gene Symbol	OMIM (Gene)	Clinical Laboratory	Yr. 1 # Samples Expected
Infantile Neuroaxonal Dystrophy (INAD)	*PLA2G6*	603604	OHSU	>100
Kallmann Syndrome (KS)	*KAL1*	308700	GeneDx	>100
	FGFR1	136350		
Russell Silver Syndrome (RS)	*H19*	103280	Emory	<50
Progressive Familial Intrahepatic Cholestasis (PFIC)	ATP8B1	602397	Baylor	50-100
	ABCB11	603201		
	ABCB4	171060		
Periventricular Nodular Heterotopia (PVNH)	*FLNA*	300017	Harvard (Wu)	<50
Xeroderma Pigmentosum (XP)	*XPA*	278700	UMDNJ/ Harvard (Wu)	<50
	ERCC3	133510		
	XPC	278720		
	ERCC2	278730		
	DDB2	278740		
	ERCC4	278760		
	ERCC5	122530		
	GTF2H5	608780		
Cornelia de Lange Syndrome (CdLS)	*NIPBL*	608667	U of	60-120
	SMC1L1	300590		30-60
Autosomal Recessive Agammaglobulinemia (AR-Agamma)	*IGHM*	147020	Correlagen	25
	IGLL1	146770		
	CD79A	112205		
	BLNK	604515		
Arginase Deficiency (Arg Def)	*ARG1*	608313	UCLA	20-100
MCT8-specific Thyroid Hormone Cell Transporter (THCT) Deficiency (MCT8)	*MCT8 (SLC16A 2)*	300095	U of	<12
Galactose Epimerase Deficiency (GALE Def)	*GALE*	606953	Emory	10
Multiple Acyl-CoA Dehydrogenase Deficiency (Glutaric Acidemia, Type 2) (MADD)	*ETFA*	608053	U of	~25-50
	EFTB	130410		
	EFTDH	231675		
Deletion 9q34 (9q34)	*EHMT1*	607001	Emory	20
Mucopolysaccharidosis VI (MPSVI)	*ARSB*]	253200	Emory	~10
Neimann-Pick Disease A and B (NPD A/B)	*SMPD1*	607608	Emory	~10
Pseudoxanthoma Elasticum (PXE)	*A BCC6*	603234	GeneDx	300
Focal Glomerulosclerosis (Focal GS)	*NPHS2*	604766	Hosp for Sick Children	38
	4	604638		
	TRPC6	603652		
X-linked Autosomal Recessive Chondrodysplasia Punctata (XLRCD)	*ARSE*	300180	GeneDx	50
Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC)	*DSG2*	125671	Hosp for Sick Children	80-380
	DSP	125647		
	PKP2	602861		
bilateral frontoparietal polymicrogyria (BFPP) (GPR56 PMG)	*GPR56*	604110	U of	15-30
Conradi-Hünermann-Happle syndrome, X-linked dominant chondrodysplasia punctata (CDPX2)	*EBP*	302960	U of	5-10
Cherubism (CRBM)	*SH3BP2*	118400	Hosp for Sick Children	10-16
Joubert Syndrome (JBTS)	*EN1*	131290	Prevention Genetics	<100
	EN2	131310		
	FGF8	600483		
Total :23	**46**		**12**	

RefSeqGene – Standardizing Clinical Reporting



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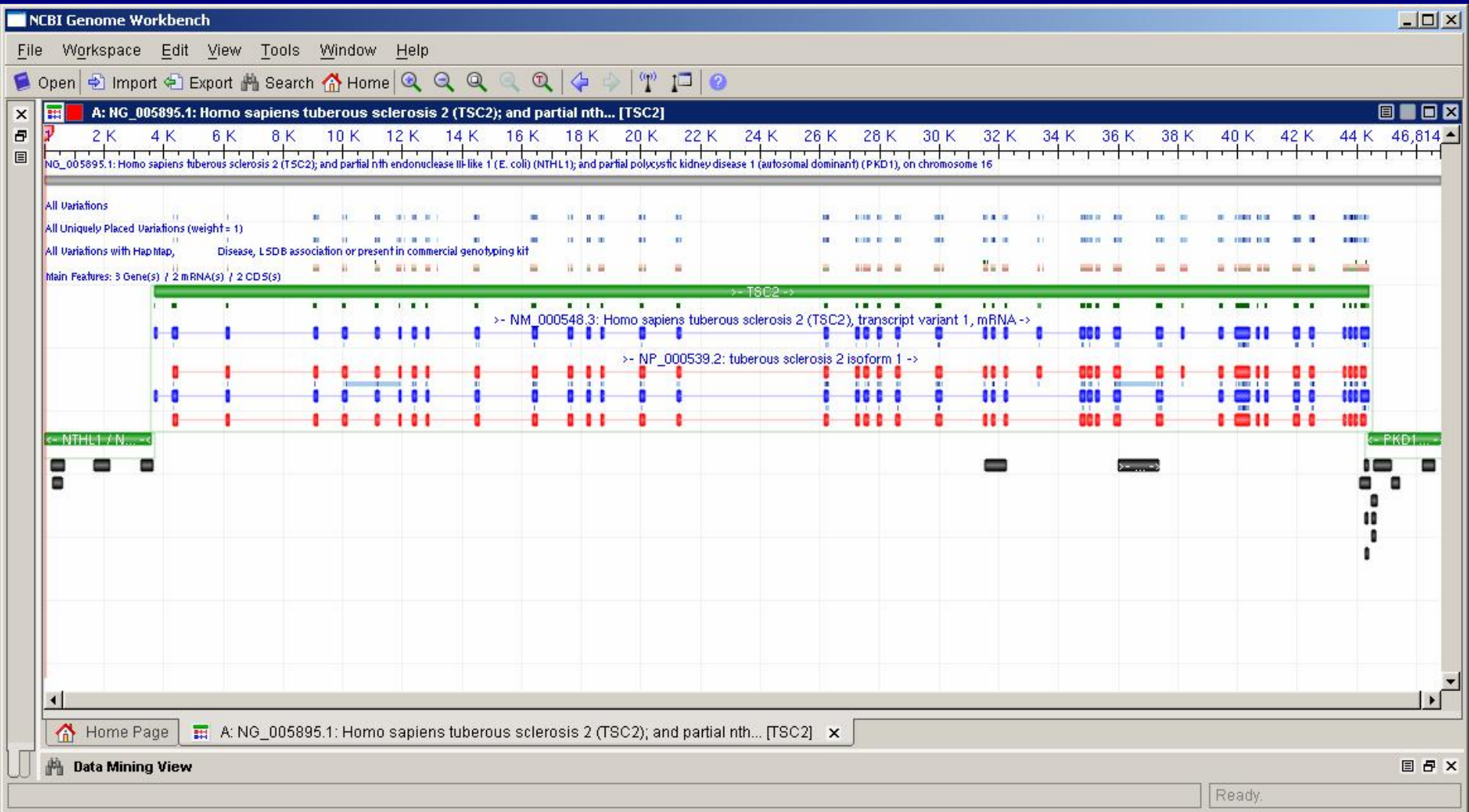
TSC2 RefSeqGene



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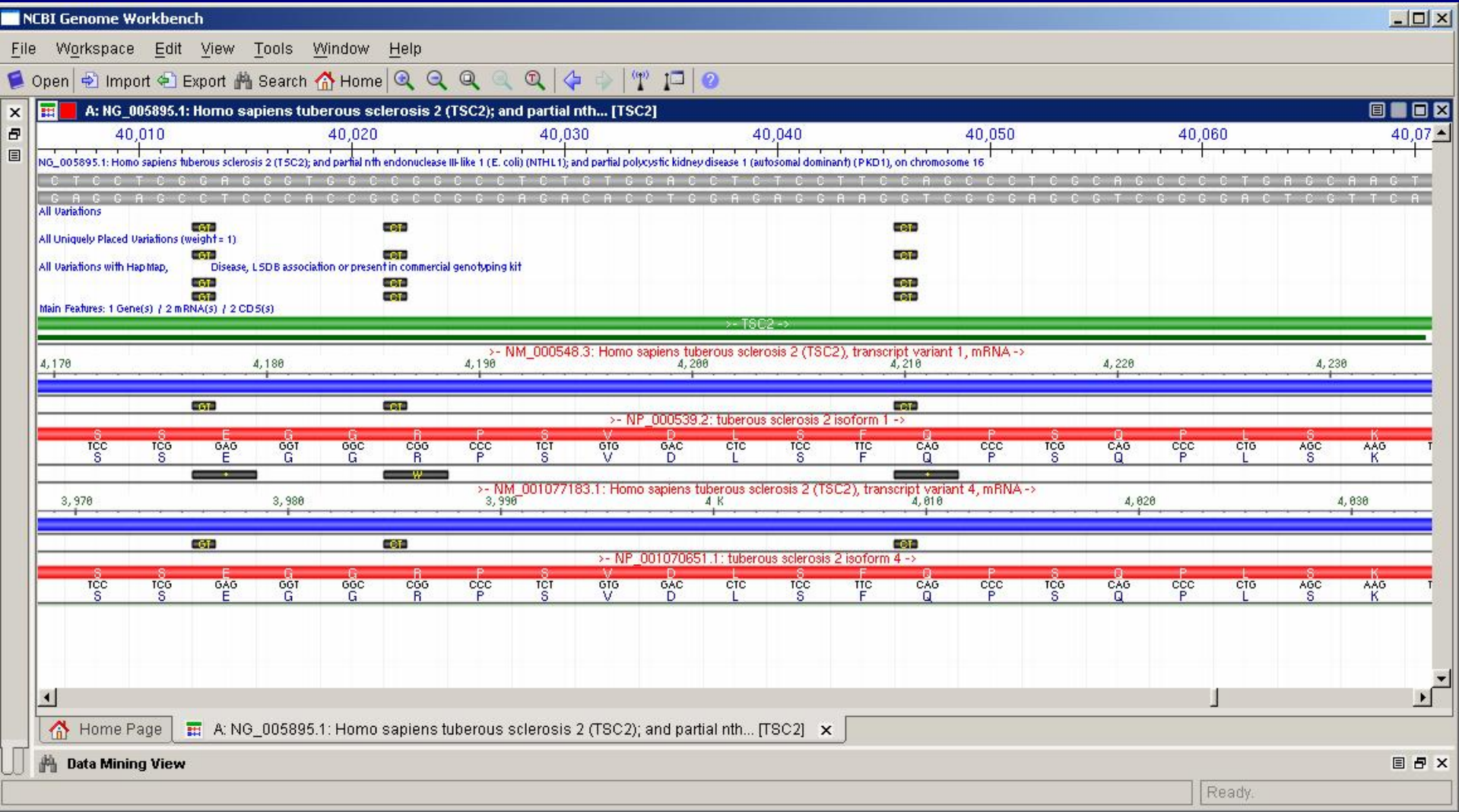
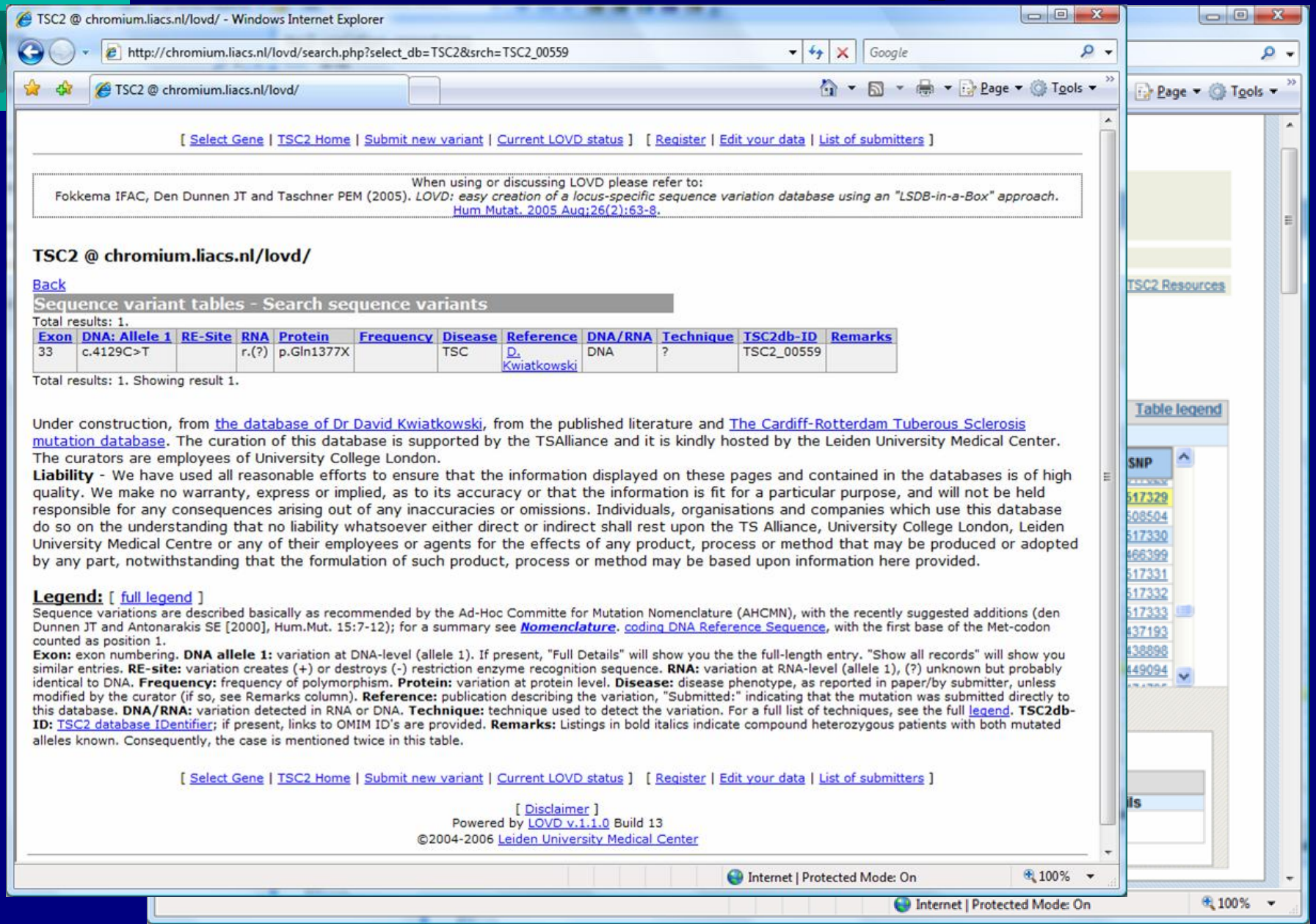
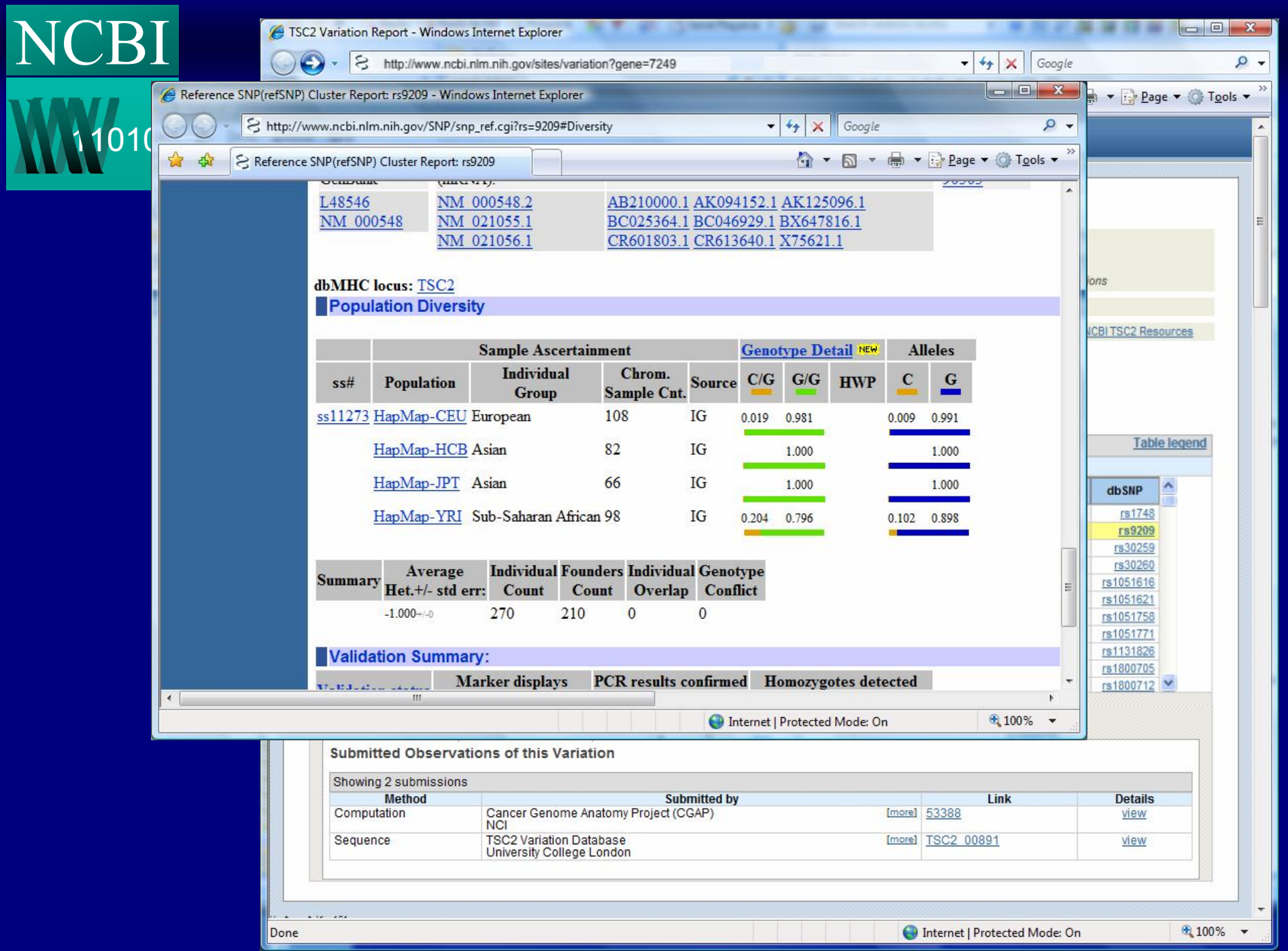
TSC2 RefSeqGene



NCBI

TSC2 Variation Report




NCBI
TSC2 Variation Report - Windows Internet Explorer
http://www.ncbi.nlm.nih.gov/sites/variation?gene=7249
Reference SNP(refSNP) Cluster Report: rs9209 - Windows Internet Explorer
http://www.ncbi.nlm.nih.gov/SNP/snp_ref.cgi?rs=9209#Diversity
Reference SNP(refSNP) Cluster Report: rs9209
L48546
NM_000548
NM_000548.2
NM_021055.1
NM_021056.1
AB210000.1 AK094152.1 AK125096.1
BC025364.1 BC046929.1 BX647816.1
CR601803.1 CR613640.1 X75621.1
dbMHC locus: TSC2
Population Diversity
Sample Ascertainment
Genotype Detail NEW
Alleles
ss# | Population | Individual Group | Chrom. Sample Cnt. | Source | C/G | G/G | HWP | C | G
ss11273 | HapMap-CEU | European | 108 | IG | 0.019 | 0.981 | | 0.009 | 0.991
HapMap-HCB | Asian | 82 | IG | 1.000 | | | 1.000
HapMap-JPT | Asian | 66 | IG | 1.000 | | | 1.000
HapMap-YRI | Sub-Saharan African | 98 | IG | 0.204 | 0.796 | | 0.102 | 0.898
Summary | Average Het.+/- std err: | Individual Count | Founders Count | Individual Overlap | Genotype Conflict
-1.000+/-0 | 270 | 210 | 0 | 0
Validation Summary:
Marker displays | PCR results confirmed | Homozygotes detected
Internet | Protected Mode: On
100%
Table legend
dbSNP
rs1748
rs9209
rs30259
rs30260
rs1051616
rs1051621
rs1051758
rs1051771
rs1131826
rs1800705
rs1800712
Submitted Observations of this Variation
Showing 2 submissions
Method | Submitted by | Link | Details
Computation | Cancer Genome Anatomy Project (CGAP) NCI [more] | 53388 | view
Sequence | TSC2 Variation Database University College London [more] | TSC2_00891 | view
Done
Internet | Protected Mode: On
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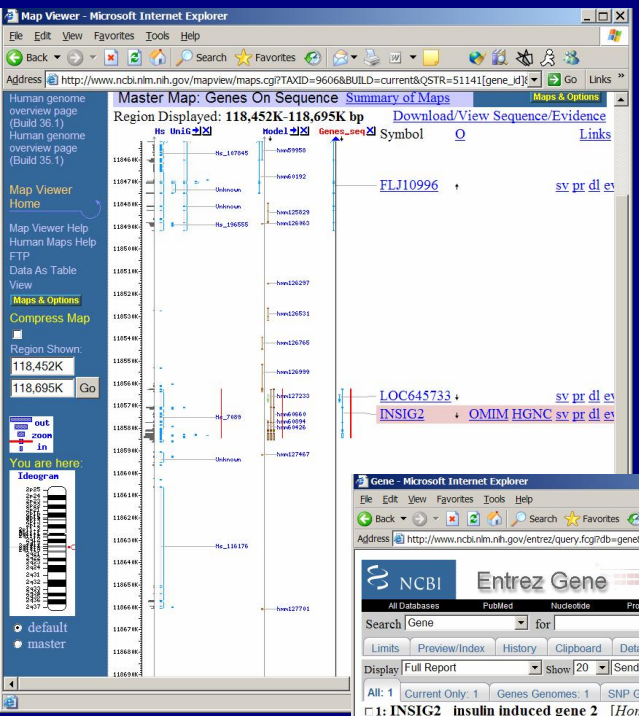
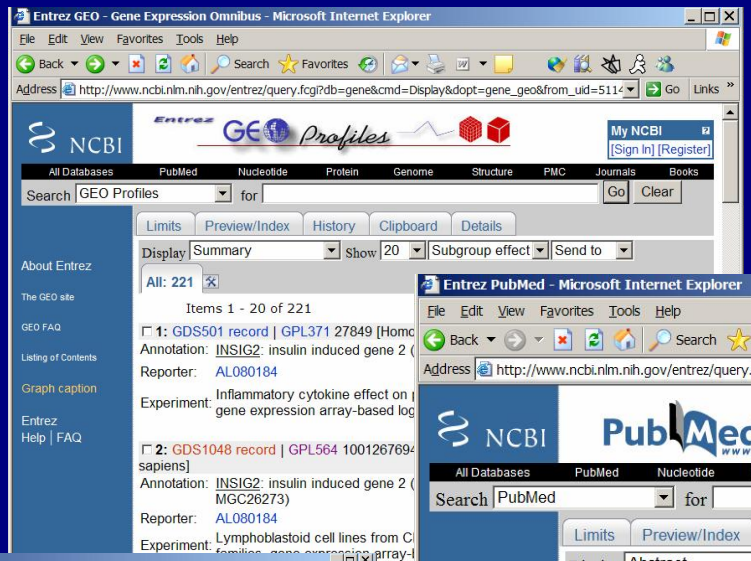
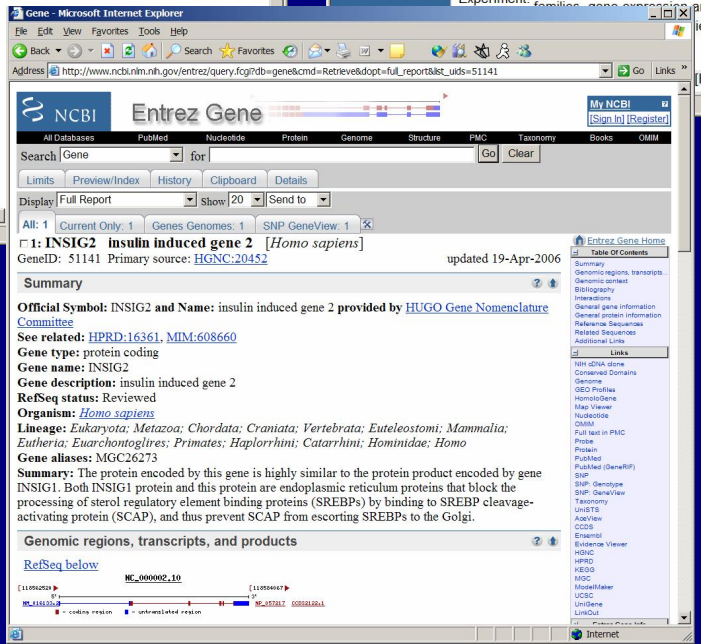
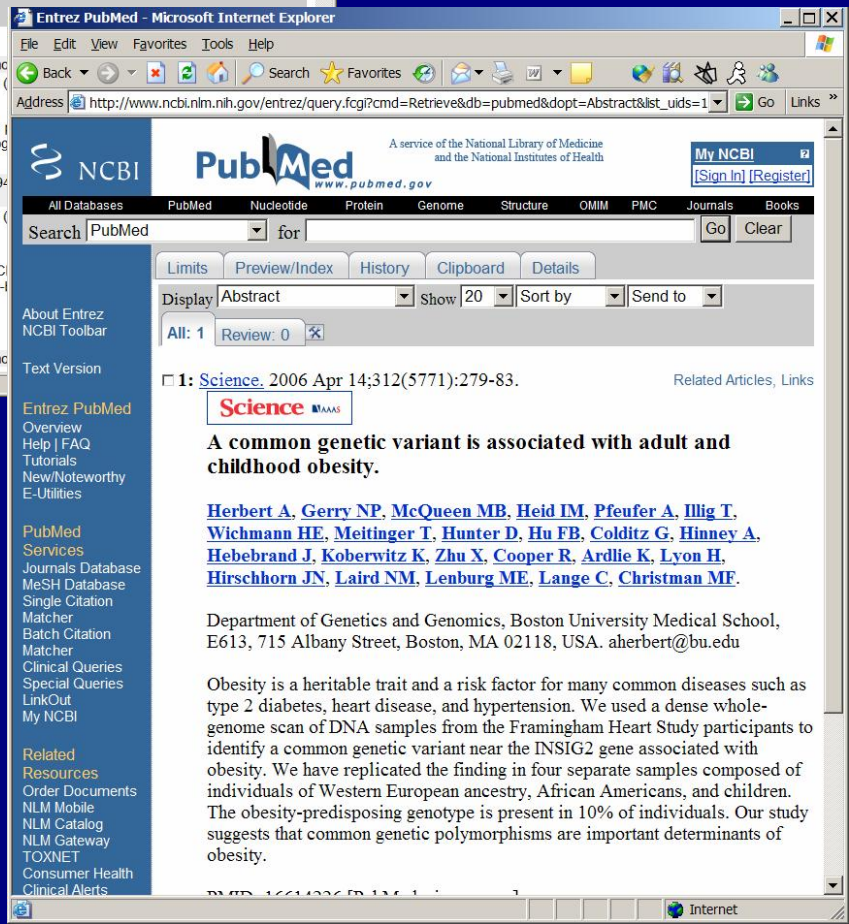
Closing the Loop









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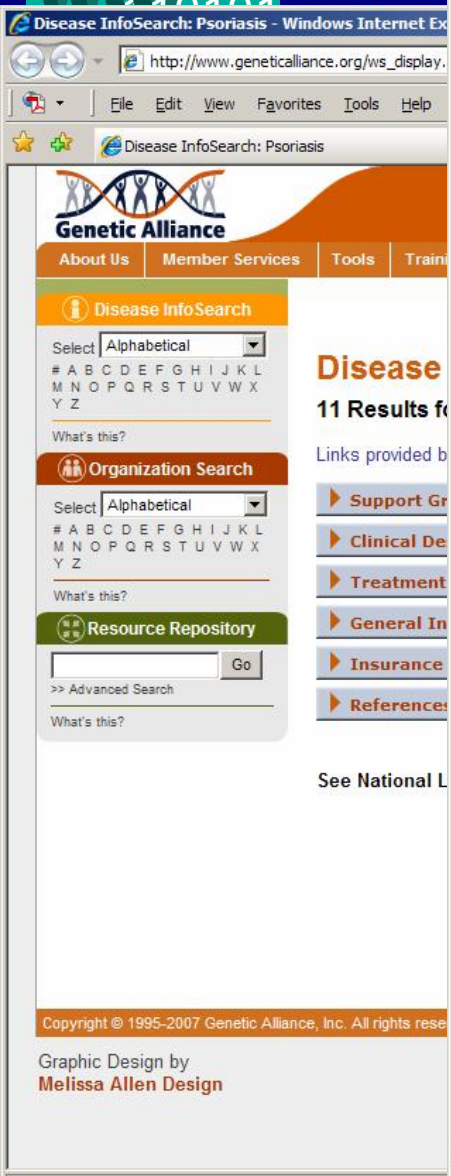
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Genetic Alliance
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Tools
Disease InfoSearch
Select Alphabetical
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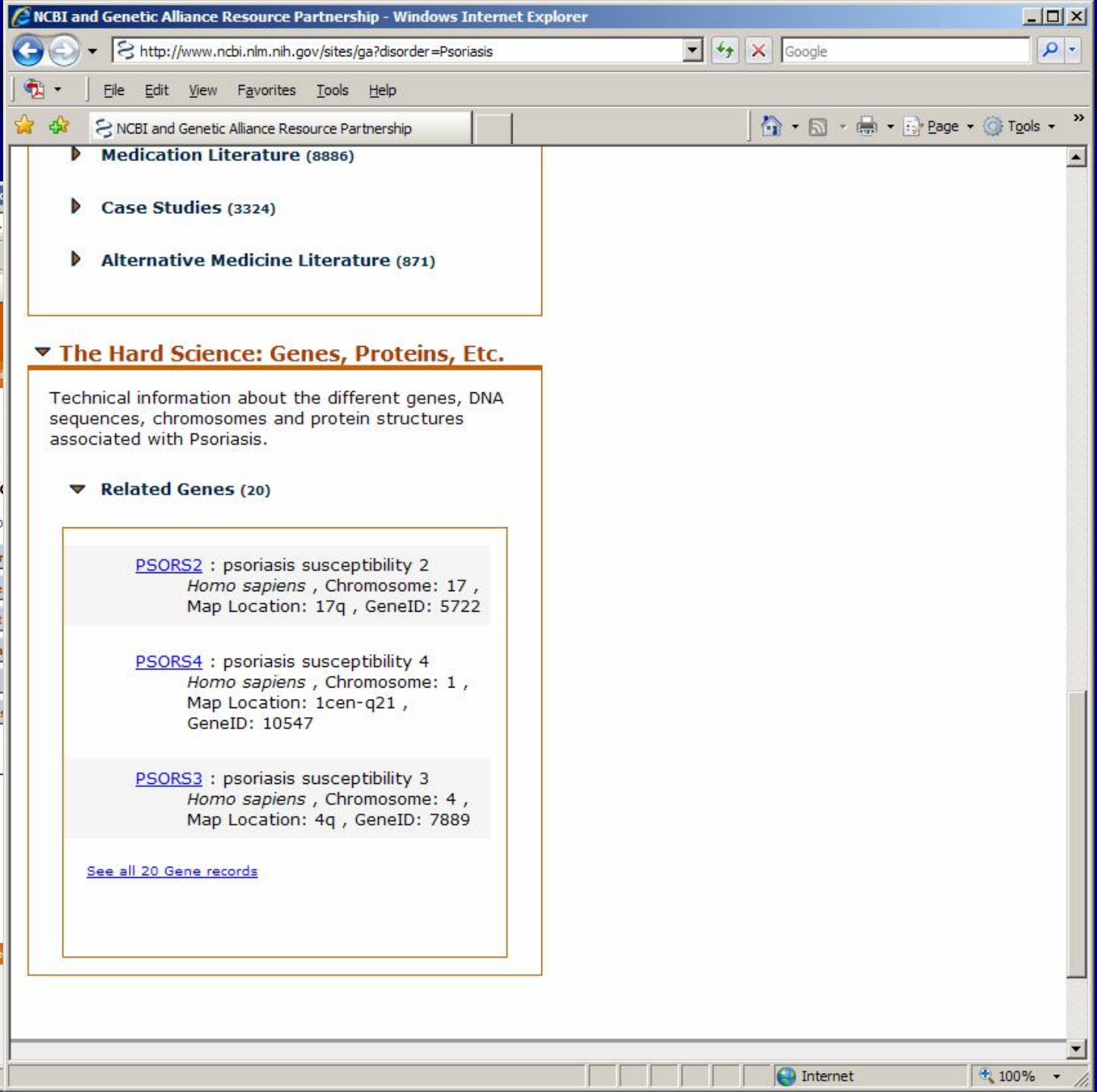
Melissa Allen Design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Tools
Medication Literature (8886)
Case Studies (3324)
Alternative Medicine Literature (871)
The Hard Science: Genes, Proteins, Etc.
Technical information about the different genes, DNA sequences, chromosomes and protein structures associated with Psoriasis.
Related Genes (20)
PSORS2 : psoriasis susceptibility 2
Homo sapiens , Chromosome: 17 ,
Map Location: 17q , GeneID: 5722
PSORS4 : psoriasis susceptibility 4
Homo sapiens , Chromosome: 1 ,
Map Location: 1cen-q21 ,
GeneID: 10547
PSORS3 : psoriasis susceptibility 3
Homo sapiens , Chromosome: 4 ,
Map Location: 4q , GeneID: 7889
See all 20 Gene records
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Schizophrenia - Windows Internet Explorer

http://web.ncbi.nlm.nih.gov/books/bv.fcgi?rid=huge.chapter.2

Schizophrenia

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Did you know ...?

Where are the genes associated with schizophrenia? Check out MapViewer to see where some of the candidate genes lie in the human genome.

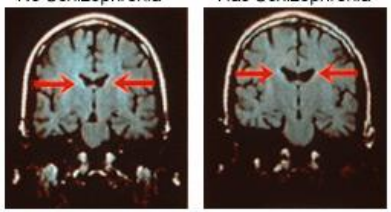
HuGE Encyclopedia

Schizophrenia

About 1 of 100 people develop schizophrenia in their lifetime. Schizophrenia is a psychiatric disorder characterized by delusions and hallucinations. Symptoms often appear in the late teens and multiple relapses throughout adulthood can make it difficult to stay in employment and maintain personal relationships, but medications and support from family members can help.

MRI of Monozygotic Twins (male adults)

No Schizophrenia | Has Schizophrenia



The red arrows are pointing to a ventricle (a space filled with ceberal spinal fluid) within the brain. Note how the ventricle is larger in the twin with schizophrenia - this is a common finding in schizophrenia, even when patients are recieving treatment.

There is no clear cut "schizophrenia gene". In fact, over 500 different genes have been linked to schizophrenia. The Schizophrenia Gene Database has whittled down this long list of genomic suspects to 26 different genes. Variations in these genes either decrease (DAO, DRD4, GABRB2, HP, IL1B, PLXNA2, SLC6A4) or increase (APIE, COMT, DRD1, DRD2, DRD4, DTNBP1, GRIN2B, MTHFR, TP53, TPH1) the risk of schizophrenia.

Studies of identical twins show that if one twin has schizophrenia, the other twin is 50% more likely to

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